UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/427,260	10/25/1999	FARHAD KHOSRAVI	S63.2-13525-US01	2937

490 7590 06/24/2011

VIDAS, ARRETT & STEINKRAUS, P.A.
SUITE 400, 6640 SHADY OAK ROAD
EDEN PRAIRIE, MN 55344

EXAMINER	
PELLEGRINO, BRIAN E	

ART UNIT	PAPER NUMBER
3738	

MAIL DATE	DELIVERY MODE
06/24/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte Boston Scientific Cupertino Corp.

Appeal 2010-001768
Application 09/427,260
Technology Center 3600

Before RICHARD E. SCHAFER, JAMESON LEE, and SALLY C. MEDLEY, *Administrative Patent Judges.*

LEE, *Administrative Patent Judge.*

DECISION ON APPEAL

This is a decision on appeal by Boston Scientific Cupertino Corp. ("Boston Scientific"), under 35 U.S.C. § 134(a), from a final rejection of claims 29, 30, 55, 56, 59, 60, and 62-64 of Application 09/427,260. We have jurisdiction under 35 U.S.C. § 6(b). We REVERSE.

REFERENCES RELIED ON BY THE EXAMINER

White	Publication 2001/0047200	Nov. 29, 2001
Khosravi	Patent 5,824,054	Oct. 20, 1998

THE REJECTION ON APPEAL

Claims 29, 30, 55, 56, 59, 60, and 62-64 were finally rejected by the Examiner under 35 U.S.C. § 103(a) as being unpatentable over White and Khosravi.

FINDINGS

White

White discloses an expandable stent. (White, abstract). A rough illustration of the stent is provided by White's Fig. 1, reproduced below. (White, ¶ 14). The stent is a continuous, open-ended tube. (White, ¶ 35). When the stent is cold, the stent is shrunken for easy insertion into a lumen, e.g., blood vessel. As the stent warms to body temperature, its mesh-like cells and overall size expand to press the stent against the lumen. (White, ¶ 64).

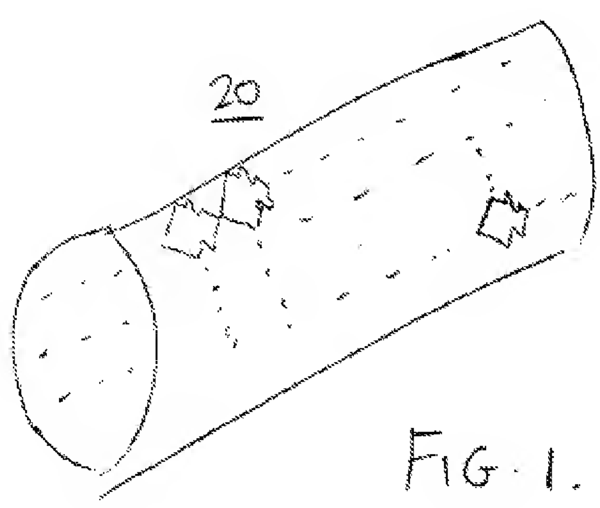
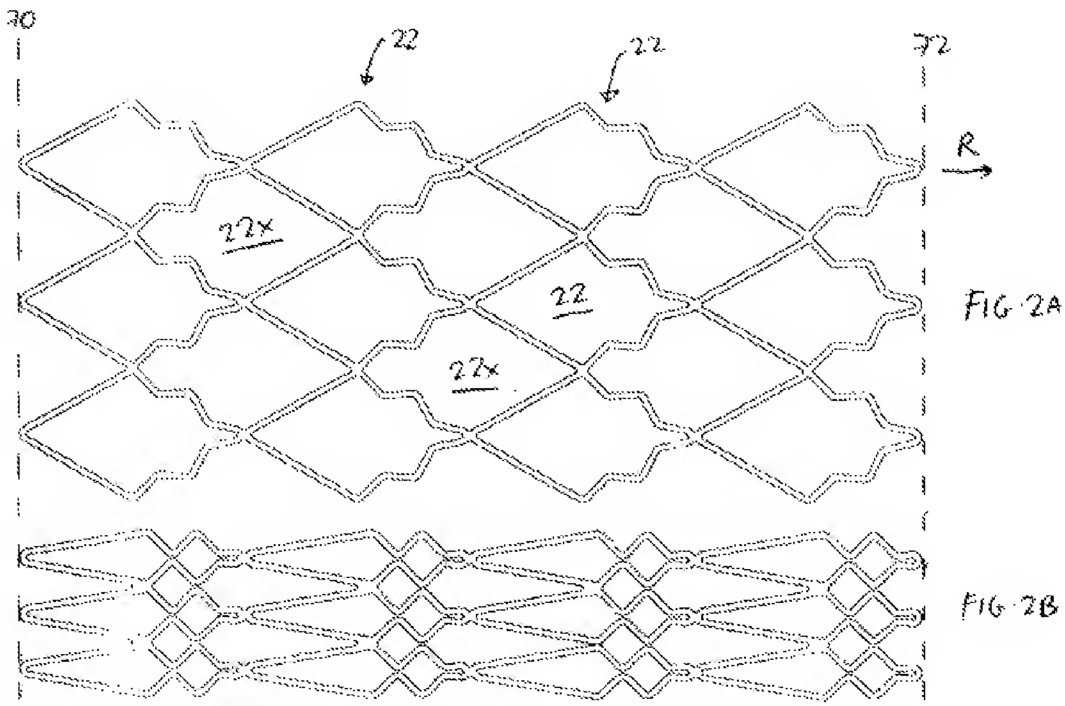


FIG. 1.

An exploded-portion view of the stent's cells is provided by White's Figs. 2A-B, reproduced below. The cells 22 are shown in their expanded

(Fig. 2A) and contracted (Fig. 2B) forms. (White, ¶¶ 15-16). The cells 22 have articulations on each strut of their right sides. As the cells 22 open to radially expand the stent, the articulations straighten to maintain the length of the cells and thereby maintain the length of the stent. White asserts the point of novelty is that the stent radially expands in width without longitudinally shortening in length. (White, ¶¶ 41-42; Figs. 3B-C).



Khosravi

Khosravi discloses a coiled stent. (Khosravi, abstract). More particularly, the stent is a rolled layer that unfurls to radially expand within a lumen. (Khosravi, 3:9-13; 3:56-63). Khosravi's Figs. 1 and 6, reproduced below, show two stents 10, 50 in furled and unfurled configurations. (Khosravi, 4:3-4; 4:19-21). The stents 10, 50 are slightly different. Namely, the Fig. 6 stent 50 includes flexible rows 52. (Khosravi, 9:28-32). The Fig. 1 stent 10 does not include a flexible region. (Khosravi, 4:61-63). We have

reproduced the Fig. 1 stent 10 to indicate the furled configuration of the Fig. 6 stent 50.

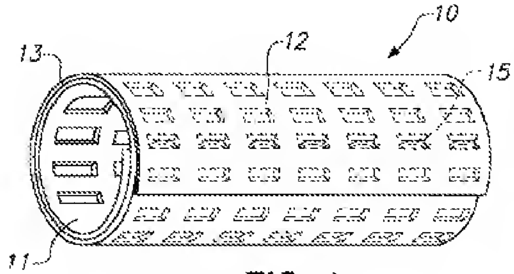


FIG. 1

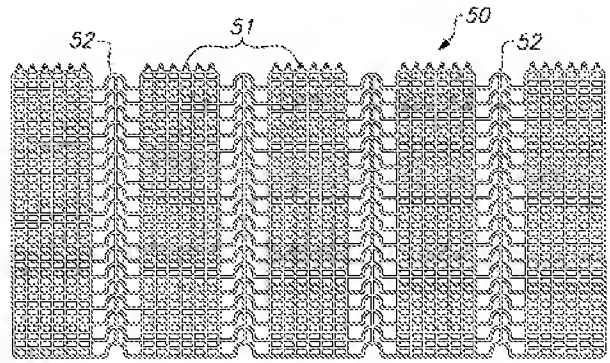


FIG. 6

As shown, the Fig. 6 stent 50 is formed from a mesh layer having teeth 51 on its upper edge. The mesh layer of the Fig. 6 stent 50 is rolled from top to bottom, such that the teeth 51 protrude from the interior edge of the furled stent 50 into the mesh openings. These teeth 51 of the Fig. 6 stent 50 protrude similarly to the teeth 15 of Fig. 1 stent 10.

As the stent 50 unfurls, it radially expands. The teeth 51 slip over the mesh in the unfurling direction, but will not slip over the mesh in the opposite furling direction. That is, the teeth 51 allow the stent 50 to radially expand, but prevent it from radially compressing. (Khosravi, 5:33-42).

Boston Scientific's Disclosed Invention

Boston Scientific's disclosed invention combines the features of a coiled stent and flexible cells. Figs. 1A-B, reproduced below, shows an exemplary stent 10 when furled (Fig. 1B) and unfurled (Fig. 1A). (Spec., 11:6-10).

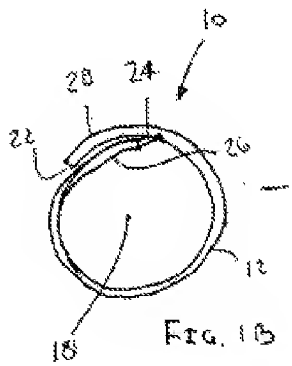


FIG. 1B

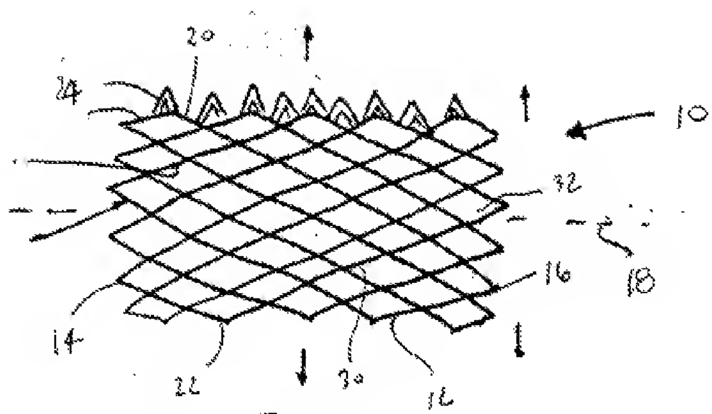


FIG. 1A

As shown, the stent 10 has teeth 24 on the upper edge. When the stent 10 is furled, the tips of the teeth 24 protrude into the mesh openings. As the stent 10 unfurls/expands open, the teeth 24 slip over the mesh in the unfurling direction. But, the teeth 24 grip the mesh in the opposite furling direction. Thus, like Khosravi's stent, Boston Scientific's stent 10 can radially expand but cannot radially compress. (Spec., 13:17-14:2; 14:14-18; 18:19-19:4). However, unlike Khosravi's stent, Boston Scientific's stent 10 has flexible cells that allow the stent 110 to radially recoil. In other words, the stent 110 cannot re-furl, but the cells can act like shock absorbers that accommodate variable amounts of radial squeezing by the lumen. (Spec., 6:4-7:2; 10:3-12; 14:3-13; 23:1-9).

ANALYSIS

Claims 29, 30, 55, 56, 59, 60, and 62-64 stand rejected under §103(a) over Khosravi and White. Boston Scientific addresses claims 29, 30, 55, 56, 59, 60, and 62-64 as a group. (App. Br. 19). We select claim 29 as representative. We reproduce claim 29, below, with emphasis on the coiled stent's teeth ("locking elements") and stretchable cells ("first cells"):

> 29. A stretchable stent, comprising:
>
> <u>a coiled-up sheet</u> having overlapping inner and outer longitudinal sections extending generally parallel to a

longitudinal axis thereof, the coiled-up sheet being expandable between a contracted condition and one or more enlarged conditions, the coiled-up sheet defining a periphery in a plane substantially perpendicular to a longitudinal axis thereof;

a plurality of locking elements extending from the inner longitudinal section for engaging openings in the outer longitudinal section to selectively secure the coiled-up sheet in the one or more enlarged conditions; and

a plurality of first cells, each first cell being defined by a stretchable element formed in the coiled-up sheet and having a first area, the stretchable elements having a shape memory such that the stretchable elements are plastically deformable towards an unstretched condition at a temperature at or below about 25 degrees Celsius, and biased to expand about the periphery from the unstretched condition towards a stretched condition when exposed to a temperature at or above body temperature;

wherein each stretchable element comprises a pair of peripherally expandable wing-like elements extending generally parallel to the longitudinal axis, each pair of peripherally expandable wing-like elements comprising a first longitudinal element and a second longitudinal element, each longitudinal element being curvilinear and having three turns between a first end and a second end of the longitudinal element, the first end being engaged to a peripheral connector element and the second end being engaged to a looped end, the looped end engaging the first and second longitudinal elements;

a plurality of peripheral connector elements; and

a plurality of second cells, each second cell being defined by four longitudinal elements and two peripheral connector elements, each of the four longitudinal elements forming a portion of a different stretchable element, each second cell having a second area, the second area being greater than the first area when the stent is in the unstretched condition.

The rejection combines the features of White's stretchable cells and Khosravi's coiled sheet and teeth. The Examiner states that it would have been obvious to incorporate Khosravi's coiled sheet and teeth within White's stent. As explained by the Examiner:

> Khosravi et al. show (Fig. 6) a sheet stent 50 having a plurality of locking elements 51 capable of being engaged in openings in the stent when coiling the stent. Khosravi additionally teaches the stent pattern used should accommodate its intended use, col. 3, lines 35-41. It would have been obvious to one of ordinary skill in the art to use a coiled sheet to form the stent and include locking elements as taught by Khosravi et al. in the stent of White et al. such that it prevents collapse.

(Ans. 4).

The Examiner bears the burden of presenting a prima facie case of obviousness. *See In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). The Examiner has to present an articulated reasoning with rational underpinnings to support the obviousness conclusion. *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). We are unpersuaded by the Examiner's reasoning. It is stated that White's stent of articulated cells could be formed as a coiled stent with locking teeth, as taught by Khosravi, thereby creating a stent that is less prone to collapse. White's stent has not been shown to have a collapsing problem, and it is not understood why the resulting stent would have been less prone to collapse.

It is not apparent how collapsing is reduced by forming White's stent as a coiled stent with locking teeth, *i.e.*, as in Khosravi. The locking teeth of Khosravi are intended to keep an unfurled stent from furling or recoiling in the opposite direction. White's stent does not have a coiled structure which

involves any unfurling and thus recoiling or furling back in the opposite direction is a non-issue. One having ordinary skill in the art would not add Khosravi's coiled structure to White's stent to address a non-existing collapse problem.

We have focused on the Examiner's stated rationale and do not find it persuasive. The rejection of claims 29, 30, 55, 56, 59, 60, and 62-64 under 35 U.S.C. §103(a) as unpatentable over White and Khosravi cannot be sustained.

CONCLUSION

The rejection of claims 29, 30, 55, 56, 59, 60, and 62-64 under §103(a) as unpatentable over White and Khosravi is reversed.

REVERSED